THE VETERINARY RECORD

A Weekly Journal for the Profession.

No. 371. SATURDAY, AUGUST 17, 1895. Vol. VIII.

"Without Casting."

That surgical operations in veterinary practice should be performed with as little unnecessary pain to the patient as possible we are all agreed. That the method of operating should avoid as far as possible all risk of injury to the subject is also not in dispute. That an operation should not entail unnecessary risk of injury to the operator might also be allowed as having some weight. But this is rather a personal matter, and some practitioners, like some horsemen, trust more to their skill, strength and nerve than do others in bringing them through a trial with safety. Whether riding, driving or operating on horses the personal risk is a matter for the performer to decide himself. Some men have greater skill than others, some have greater luck, and some, we say it respectfully, less brains.

There is, however, a view of the personal risk which must be considered. A very clever or a very stupid horseman may be trusted to ride a nasty horse so long as he does not put other people in peril. He may drive a vicious horse himself, but he has no right to take women or children in the trap with him. So the veterinary practitioner has the privilege of risking his own bones but he has no right to risk those of attendants or assistants. Nor has he the right to risk the life of his patient or the property of his client. If an operation be performed on an animal not under proper restraint, or insufficiently secured, an accident may happen. and the owner may call it negligence and go to a court of law for damages. Suppose, for instance, that a man ventured to unnerve a horse without first casting him, that in a struggle the metacarpal artery was divided, and that then the horse escaped and bled to death. Or suppose that, without properly securing a horse, a probang was passed half way down the œsophagus, that the animal got excited, rushed forward and drove the instrument through the wall of the passage. One more supposition we offer. If a practitioner, without casting, had cut through the scrotum of a horse and whilst applying the ecraseur the animal threw itself down and the instrument penetrated the abdomen, would it strengthen the defence to plead that the operator had sustained a fracture of the femur at the same time?

We believe that if it could be proved in a Court that insufficient care in securing a horse had been adopted and that injury resulted to the patient during an operation, by the disablement of the operator, pecuniary damages would be added to the injury, and that a jury would not let their sympathy for his accident interfere with the claim of his employer. Practitioners have often been injured whilst operating on animals insufficiently secured, and there are many circumstances in which the disablement of the operator at a critical moment might cause death or serious injury to the subject.

In the present diversity of opinion about the use of restraints in operating on animals it would be easy to have an array of veterinary talent on each side, and a jury would have an uncertain task. If it is unnecessary to cast a colt for castration, then all accidents which occur during casting are cases of negligence. On the other hand if it is necessary to cast, then all accidents occurring from neglect to cast are acts of negligence. That omission to cast "saves the time of the operator" is clearly no defence to an action, and we cannot therefore allow that it is an argument in favour of any method of operating. The same objection may be taken to the claim "that fewer assistants are required."

Methods of operating must be selected for other reasons than these. The amount of pain inflicted is a very fair consideration. The risk to the patient is an essential one. The security offered that the operation will be completed properly should be as definite as possible. Whilst we profess to be professional men something may be allowed for dignity. Whilst we profess to be scientific men our methods must be such as to afford the very best conditions for the carrying out of all surgical principles.

One word may be added in reference to the business side of the question. We have to live, and this means that every man has to accept some risks—risks of actions for negligence, risks of personal injury and risks of loss of clients. These have nothing to do with surgery or science, and each man may be left to himself to value his risks. There is no doubt that veterinary clients possess a good deal of human nature. They like a show. They admire pluck and skill, and especially when it is accompanied by a spice of danger to the performer. Many horse-owners admire the man who fires hocks without casting the horse, or who severs the spermatic cord whilst the victim is on its feet. To the client one injured animal is of more account than are two damaged veterinarians. Our employers know nothing of scientific surgery, they see nothing undignified in a sweating and struggling operator. They decidedly appreciate a performance by A which they believe B is unable or unwilling to supply. From a business point of view then it will often pay to risk a little. Gentlemen with youth and agility have here an advantage over those who have passed their physical zenith. The question is not one to quarrel about, but it may be discussed with interest and amusement from different positions—as a matter of science, of business, or of professionalism.

CASES AND ARTICLES.

INDIAN "FOREST FLIES."

Hippobosca (*Ægyptiaca ?*) Macq.

By Miss Eleanor A. Ormerod, F.E.S.

On the 26th ult. I received from Messrs. R. S. Hart, the eminent veterinary surgeons of Calcutta, a liberal supply of "Forest flies" with the mention that they were "common in Bengal and in other parts of India." From details given these *hippobosca* were shown to be very similar in habits to the kind which we have in this country, also that although they infested dogs, it was to horses that they were most troublesome. It was noted "some horses are driven mad even by the presence of a single fly, and in driving along not unfrequently start kicking most violently, kicking over the traces and shafts, and frequently running away with the carriage" &c. The locality of the infestation on the horses was noted as the same as with us, and the specimens sent me were certainly "Forest flies," that is of the genus *Hippobosca*, but differed from the *Hippobosca equina*, our too well known species, in being rather larger and also in the neuration of the wings; also in the back (the thorax entomologically) being very much more marked with small yellowish patches, and the *scutellum* (the small portion of the hinder part of the thorax immediately above the abdomen) having a central pale yellow marking and two side ones on a dark ground, instead of as with the *equina*, only one central pale marking.

As the precise identification of these Forest flies was of considerable importance in connection with such valuable notes as those of Messrs. Hart, I forwarded a good supply of specimens to one of the entomologists at the *Museo Civico* at Genoa, where I was aware that there were trustworthy types of various of the exotic species of *Hippobosca*, and he was good enough to compare Messrs. Hart's specimens for me.

These he told me were certainly *not of Hippobosca equina*, nor of *canina*, nor of *bactriana*, nor *camelina*, but they greatly resembled the *Hippobosca Ægyptiaca*, Macq., of which he was good enough to give me a type specimen (identified by Professor Rondani himself) for my own comparison. After the most minute and careful examination which I have been able to make I cannot find any point of specific difference between this type specimen and those sent from Calcutta. They correspond quite precisely in the peculiar neuration of the wings which differs markedly from that of the *hippobosca equina*, and of which Prof. Rondani says in his notes on the "Muscaria Exotica *Musei Civici Januensis*" (p. 15 of the separate issue) that by this the *Hippobosca Ægyptiaca*, Macq., may be "easily distinguished from all its congeners." Also there was absolute similarity in the elaborate markings on the thorax and in every point in which I was able to make comparison, excepting that the Indian specimens were of rather a darker shade of colour, and also (or consequently) the markings on the hinder legs were more noticeable in those than in *Ægyptiaca*.

This matter of difference of shade of colour cannot, I think, however, be at all considered to amount to a distinction in species. I find varieties of tint in the numerous specimens of our *hippobosca equina* lately sent me, and also it is exceedingly likely that soaking for some weeks in preservative fluid during transmission, may have affected the depth of the colour.

But looking at the similarity in other respects, also that the Indian specimens have the peculiar wing neuration by which Professor Rondani states the *Ægyptiaca* is distinguishable from "all others" of the *hippobosca*, it appears to me that we may safely consider this kind so common in Bengal and other parts of India, as the *hippobosca Ægyptiaca* Macq., or if presently we find there is a permanently darker shade of colouring perhaps it may be distinctively named by dipterists as the *Hippobosca Ægyptiaca* Macq. var., *Bengalensis*. The species was first recorded in Egypt, but since then has been found in Persia.

To the above it may be of interest to add that in the course of my own continued investigations, I find that the large curved claw of our Forest fly has beneath it a saw-like edge with grooves down the lower part of the side of the claw, so that each groove runs to the notch between each tooth, the claws when laid side by side thus forming a most powerful grasping instrument. This is very noticeable when the claw is got into the right position with a good side light, and examined as a dry object in natural condition, but in balsam or glycerine the grooves are —to me at least—invisible.

I trust that the above may be considered of some interest.

Torrington House, St. Albans.
August 12th, 1895.

ACUTE GASTRIC TYMPANY.

By E. Wallis Hoare, F.R.C.V.S., Cork.

Subject.—An aged cart mare.

Previous History.—Was attacked with colic about six months ago. Was always a greedy feeder and fed chiefly on hay and oats. Was left on grass on the night of June 2nd; when brought into the stable in the morning of June 3rd showed symptoms of pain. Got ordinary colic draught consisting of chlorodyne ʒij., spts. æth. nit. ʒij., ol. lini. Ojss. This had the effect of giving temporary relief, but the pain returned in the afternoon and continued during the night.

Clinical History.—Constant pawing with each fore foot alternately, sweating on both shoulders, looks towards sides, sits on haunches frequently, and has constant eructations of fœtid gas. Abdomen tympanitic, no action of bowels. Owner gave ale with ginger during the night, pain gradually lessened, and on my attendance on June 4th the animal was dull, pulse accelerated, temp. 101·5dgs., slight distension of abdomen, no action of bowels, urine normal, total loss of appetite.

Prescribed ol. tereb ʒij., spts. ammon. aromat ʒij., glyc. belladonnæ ʒss., ol. lini. Oij. to be given at once, also gave enema with long rectum tube, and allowed only oatmeal gruel and bran water as food.

June 5th. Owner reported that mare was attacked by slight pain last night, prescribed 2 doses of glyc. belladonnæ and spts. æth. nit. At 3.30 p.m. the owner reported that the bowels had acted freely and that the mare was anxious for food.

June 6th. Animal was reported all right.

Remarks.—The above was evidently a case of gastric tympany which was relieved by the frequent eructations of gas. Without the presence of these eructations it is difficult to diagnose this condition and to adopt appropriate treatment. The position of "sitting on the haunches," although not a symptom peculiar to gastric tympany, is nevertheless frequently present in this condition, and is one which deserves attention.

With reference to treatment, it is evident that the indications are to dispel the gas, to overcome the paralysed condition of the gastric walls, and to get rid of the ingesta. Lately I have employed pure terebene in 2oz. doses with very good results. This drug is not irritating like ol. tereb., and as far as I can judge it possesses all the therapeutic actions of the latter.

I usually combine the terebene with spts. ammon. aromat, and glycerinum belladonnæ and give in 2 pints of ol. lini. I think that large doses of ol. lini. should be employed in preference to aloes, as the latter takes a long time to act and may be contra-indicated if any inflammatory condition be present. If the gastric tympany be excessive it is a most serious condition as medicines given even in large amounts do not appear to have any effect.

The autopsy reveals the stomach distended with gas to such an extent as is hardly credible, and it is surprising the degree of distension to which this organ can be subjected, without rupture of its walls occurring. It seems strange that this condition is not noticed as a special pathological condition in works on veterinary medicine of the present day. In Percivall's Hippopathology, vol. 2, under the heading of "Tympany of the Stomach," an excellent description of this condition is given. As aids to diagnosis he draws attention to the great degree of suffering manifested, and the resistance to all ordinary remedies, the tympanitic appearance of the abdomen, and the presence of eructations and vomiting. The two latter, however, may be absent in extreme cases, when diagnosis becomes a difficult matter.

Percivall also discusses the advisability of puncturing the stomach by means of a special trocar and cannula. To anyone who has made an autopsy on a case of this nature this thought would at once strike him, the enormous distension of the organ, however, has the effect of displacing it to a great extent so that the proper land marks for introducing the instrument with safety become a matter of difficulty.

The occurrence of acute laminitis after gastric attacks is by no means uncommon and it forms a very unpleasant sequel to such cases.

COMPULSORY NOTIFICATION.

By C. Cunningham, M.R.C.V.S., Slateford.

Compulsory notification is possibly good enough in the main—towards the eradication of contagious disease it appears but right that every practitioner should report—and there may be grave reasons against making every professional man an inspector. Admitting all this as not worth arguing about, how pleasant it is on the other hand for a veterinary surgeon to find that all the cases which he promptly and honestly and consistently reports are systematically and on purpose handed over to other, and it may be rival practitioners and inspectors.

How pleasant it is—I know from experience—every now and again for weeks and months to act the part of the jackal or lion's-provider to Professor So-and-So, F.R.C.V.S., and Mr. Such-an-One, M.R.C.V.S., at several miles distance, and to their successors and coadjutors the Travelling Inspectors of the Board of Agriculture. How pleasant it is as the result of speedy and persistent notification to find one's district over-run by these gentlemen, to see them driving up to and past one's door and into our clients' premises. How sweetly the fumes of their dainty cigars or tobacco pipes float on the breeze. How pleasant it is to know that you have been the means, directly and indirectly, of providing these men with fitting and nearly continuous and remunerative employment while you yourself get not a brass farthing.

You find a case of contagious disease, you call in the constable from the street and tell him all about it; you hurry home and spend two shillings on a long telegram to the Board of Agriculture, giving the full name and address of the owner and the place where the disease exists, and to your chagrin you hear no more of the matter. The "Professor" or some M.R.C.V.S. or a lay inspector of the Board is sent to pick up your case and forward it in the voluminous bag to London. This little game goes on with some interesting variations just sixteen times in five months, and at the end Major Tennant insults you by asking you to render your account for forwarding "intestine" to London. Just sixteen times lately have I faithfully and honourably notified to the Board of Agriculture the existence of contagious disease in this district, and what have I had in return?—"kicks—kicks down stairs," and I daresay I ought to feel highly honoured, and duly edified by, and humbly submissive under the process.

Time was when under the Local Authority you were a veterinary inspector in deed and in truth, but now you have to stand aside and give place to others, and with wonder and surprise admire their beautiful work. You may possibly, too, have had the great honour of appearing as a witness before a Parliamentary or Departmental Committee—and of being examined and cross-examined by its distinguished members—sinking your own professional and personal wishes and desires and advising the adoption of measures which you considered most likely to be of public benefit. You got a guinea for that work

how pleased you should be when under this proposed Compulsory Act you are offered half-a-crown for every outbreak you may come across.

Is compulsory notification good as regards veterinary surgeons? Will the Council of the R.C.V.S. cordially and unreservedly recommend its adoption and imposition? The fee to a medical man for reporting contagious and infectious disease is, I understand, half-a-crown. Eight cases of measles or scarlatina £1 and so on, and there is no interference with the doctor's work but rather assistance given. If veterinary surgeons are to be paid by this scale and on this footing we may welcome the Compulsory Act. Before now I have reported sixty cases of swine-fever when the travelling inspector, after due and formal examination, denied its existence—2s. 6d. ×60=£7 10s. would pay. I fear, however, there is no such good fortune for us poor "veterinaries," rather will it be "report your outbreak and receive your half-a-crown, and then retire and let our young and favoured professors (whose errors I have before now had occasion to rectify) and our captains and sergeants of marines as travelling inspectors do your work."

"Do unto others as you would that others should do unto you" is the golden rule, worthy of universal observance. If the Board of Agriculture treats veterinary surgeons who notify and report, with courtesy and as gentlemen, the said Board may count on honourable and faithful service in return; but is there any rule, legal or moral, which should or which can compel a professional man in every day practice to notify and report to his own certain detriment and injury?

Now-a-days I for one waste no money nor time on telegrams and letters to the Board of Agriculture. Fortunately cases of contagious disease are rare, but when a suspicious case does crop up a halfpenny post card suffices admirably. A few words as to the circumstances and symptoms and nature of the disease, but with nothing to indicate the owner of the suspected subject or its locality, addressed to the Chief Veterinary Officer at Whitehall may, and probably will, receive due attention, and constitutes in my opinion abundant and reasonable "notification." If the said Board chooses to employ you good and well, if not let the Board and its officers search out the existence of the disease on their own account. Scientific investigation and discovery is good for the health and mind of the police and those travelling inspectors. Too much by far was done for the late ungrateful and ungentlemanly Board. Veterinary surgeons will do well in future—with compulsory notification in force or without it—to look more keenly after their own interests.

Feeding at Dog Shows.—An article in *Land & Water* on the development of dog shows since the first exhibition at Newcastle-on-Tyne in 1859 points out that Spratt's Patent have materially aided the solution of the feeding difficulty by the substitution of good sound biscuits, largely composed of meat of the best quality, in place of the old sloppy messes of half-cooked meal, in which lumps of extra dubious-looking fat and flesh were present. They now cater at all the leading shows, and have fed the dogs at exhibitions of the Kennel Club since its formation 1874. The institution of their benches and partitions also marks a great advance in dog shows.

EXTRACTS AND NOTES.

THE GROWTH OF THE ART AND SCIENCE OF MEDICINE.

By Sir William Broadbent, Bart.

From the Address in Medicine delivered at the annual meeting of the British Medical Association.

I place the words "art" and "science" in this order advisedly, for the art of healing is one of the primary needs of social organisation, however rudimentary, and preceded by many ages the development of anything which could be called a science of medicine. So far, moreover, the art of healing has always been in advance of science, firmer in its basis and more secure in its principles, and, even when medicine as a science has realised our highest aspirations, the end and aim will be art, that is skill in the recognition and treatment of disease. At the same time it is true that until science began to throw light on its path the art of healing struggled blindly on its way, and its advances were intermittent and slow, with long intervals in which there was stagnation and retrogression. All true progress in medicine has consisted in the application of the results of scientific investigation to the facts of observation.

Medicine before Hippocrates.

At whatever period of the world's history and at whatever stage of civilisation we may contemplate the physician engaged in combating disease, there will be recognisable three distinct factors in his work—his power of identifying disease, the remedies at his command, and the ideas by which he is guided in the employment of these remedies.

The first rough and imperfect identification of the more conspicuous forms of disease was scarcely worthy of the name of diagnosis. Anatomy, which is essential to the localisation of morbid conditions, was scarcely known; no shadow of comprehension of physiological or pathological processes entered into the conception—it was simply the attaching of a name to an assemblage of symptoms, the course of which, however, was watched with great sagacity.

How remedies were first discovered and how the properties and uses of so many of them as were handed down from remote antiquity were known is matter for amazement. Animals are credited with instincts which direct them to the consumption of certain herbs or mineral substances when their health is deranged; the instincts of the primitive man also must have applied to remedies as well as to food, and experience of their effects must have been accumulated and transmitted, embodied frequently in legend or superstition, as part of tribal knowledge.

Of the infancy of medicine properly speaking we know nothing. Individual acts of healing are related in the Old Testament, and the treatment of wounds is described by Homer; the Chinese from remote antiquity had a system of medicine, and medicine has a place in the *Vedas*; but in the works of Hippocrates, the earliest medical literature which has come down to us, we are at once introduced to the theory and practice of the art of healing at a considerably advanced stage of development. Already there were rival schools of thought and treatment, and disease was discussed with extraordinary acumen from opposite points of view both as regarded its nature and phenomena.

Bleeding was in everyday use, not by any means as a routine fashion, but with judgment; cupping also was practised. The virtues of opium were known, and purga-

tives of various kinds, chiefly irritating and violent, and emetics were familiar remedies; enemata and suppositories and pessaries were employed, and fomentations and poultices in great variety were applied.

Hippocrates.

Hippocrates, whose writings embody all our knowledge of ancient medicine, was born about 460 B.C. He was a contemporary of Socrates, Euripides, and Aristophanes, and was a worthy representative of medicine at that brilliant period of Greek literature and intellect called the age of Pericles.

It is true that his knowledge of anatomy was rudimentary, and that his physiological ideas were totally wrong, but he has left of himself the picture of a sagacious observer and wise physician. He was the inheritor of the knowledge and traditions of the school of Cos, and another source of information by which he had profited was the training establishments of athletes, where the influence of diet, gymnastics, and baths on health and vigour was carefully watched. His attitude of mind was towards the study of disease as such, rather than the differentiation of distinct diseases. Refinement in this latter direction had obviously been carried much too far by the school of Cnidos, which he criticised and opposed, where symptoms were looked upon as separate morbid entities.

His distinguishing merit, however, was that he was guided by observation and not by theory. Hippocrates could not, any more than his contemporaries or successors, or than we ourselves, escape the dominion of theory, but his theories were generalisations from observed facts, and not deductions from preconceived ideas or so-called first principles.

During the 500 years which separated Galen from Hippocrates the centre of gravity of the civilised world had shifted. Greece, shattered by conflict between its different States, had succumbed to Macedonia. Alexander had conquered Asia and then died. On the ruins of his empire Rome had gradually risen, and when Galen lived had extended her rule over Greece, Asia Minor, Egypt, and the southern littoral of the Mediterranean as well as over Gaul, Spain, and Britain. There had been time, however, for the development of a high degree of intellectual activity and literary culture under the Ptolemies in Egypt, and Alexandria had become a great centre of learning. Here marked advances were made in anatomy, dissection was practised on human bodies as well as on animals. Herophilus, between 305 and 280 B.C., left his name to the confluence of the sinuses of the dura mater; Erasistratus, a contemporary, recognised in a crude way the motor and sensory functions of the nerves; Chrysermes, 240 B.C., wrote on the pulse, as does also Heraclides, 230 B.C.

Medical writings date from Alexandria as late as 170 A.D., but the school had long lost its authority, and Rome henceforth attracts the highest medical talent. The physicians who first made a name in Rome are Greeks—Asclepiades, the friend of Cicero, and Galen himself. Celsus, however, who comes between the two, writes in Latin.

Galen.

Galen, who was born at Pergamos A.D. 130, as is known to all of you, dominated medical thought for 1,500 years, and if it was inevitable that authority should exercise such undisputed sway for so long a period it was perhaps fortunate that it derived from Galen. He was in spirit a follower of Hippocrates, and the basis of his ideas on disease and its treatment was observation. His keen and active intellect and fertile imagination, it is true, led him to theorise on every conceivable subject; but the impression left as to his character by reading his numerous works is that of an acute observer, of remarkable ingenuity and profound judgment, and excellent common sense.

He dissected diligently and thoroughly, but mainly monkeys rather than the human subject. Taking this into consideration, his writings on anatomy were wonderfully complete and exact. They held sway till the time of Vesalius. He finds the most ingenious reasons, often far-fetched and preposterous, for the form, consistence, and relations of all the various organs.

In respect of anatomy, his knowledge was incomparably superior to that of Hippocrates. He experimented on the spinal cord and on the nerves, and knew that they subserved motion and sensation—knew even that there were motor and sensory nerves distributed to the muscles and skin respectively, discovered the part taken by the recurrent laryngeal nerve in phonation, and, although his physiology is chiefly represented by fanciful teleological explanations of the uses of the different parts and organs, he made noteworthy additions to the knowledge of functions.

Apparently Galen was the first to establish the fact that the kidneys secreted the urine, and that it was conveyed by the ureters to the bladder. At any rate, this was disputed in his time, the objection being that the urine could not be forced back through the ureters, and could not, therefore, have entered by these canals. The bladder was supposed to attract the urine. He demonstrated it by trying the ureters; and in the course of his experiment he almost stumbles on the discovery of the circulation, for he maintains that blood is carried by the renal arteries to the kidneys in order that its watery part may be filtered off. The traditional ideas as to the origin of the veins and of the flux and reflux of the blood in them, however, blinded him to this and other evidence, and he believed that the arteries contained air, though he maintained that they also contained blood.

To convey even the faintest idea of the additions which Galen made to medical knowledge would require more than all the time at my disposal for this address. He wrote more than a hundred treatises on various subjects, including six on the pulse, and while giving extravagant descriptions and making fanciful comparisons, he pointed out distinctions and characters which have been verified by the sphygmograph.

Polypharmacy.

Aloes, in Galen's hands, had largely taken the place of the irritating purgatives, such as hellebore and spurge previously employed. Dioscorides, who wrote in the first or second century, describes more than 2,000 substances, chiefly vegetable. It may be remembered, by some now present, that an attempt was made only last year to invalidate the patent for lanoline, on the strength of a process for obtaining fatty matter from wool, given by Dioscorides.

Both Hippocrates and Galen rejected the doctrine of the sect of empirics, who declared that experience alone, without reasoning as to the nature of relations of observed phenomena, and without reference to causation, or to the influence of climate, season, age, sex, character of constitution, or mode of life, was the only safe guide in the treatment of disease.

A high standard of medical literature is maintained by Oribasius, the friend of Julian, 350 to 400, by Aetius, who wrote near the end of the fifth century; Alexander, a little later in the reign of Justinian; and Paulus, who lived about 620; and improvements in practice can be traced during this period.

Alexander treated gout by purgatives, in which a kind of colchicum was a constituent. Paulus first described the aperient action of rhubarb, and extolled steel in scirrhus of the spleen.

The Dark Ages.

After this there is a long gap in the history of medicine and of the liberal arts generally, but this is not to be wondered at. The Roman system of civilisation was

gradually broken up, and its warring fragments were shaped by geographical and racial conditions into States out of which modern Europe has grown.

The seat of Government was shifted from Rome to Constantinople in 330, Rome was sacked in 546 and 549; later the Church established its dominion over the ruins of the ancient city.

As countries and governments were organised and delivered from the pressure of constant war, universities were founded. At Salernum there were already professors of physic in the middle of the seventh century. Charlemagne founded a College here in 802, and the Schola Salernitana was dedicated to Duke Robert of Normandy, son of William the Conqueror. The Universities of Bologna and Paris almost rival in antiquity that of Salernum. Thus in these dark ages the revival of learning and the *renaissance* of art were being prepared.

The Arab Physicians.

Names which have remained famous began again to appear in the ninth century. The followers of Mohamed in the course of their conquests found at Alexandria the works of Hippocrates, Galen, and other early medical writers. These they translated into Arabic, and upon them was based the medical learning for which Arabian physicians became renowned. With the Moorish conquest of Spain, and the extraordinary culture and civilisation developed by the invaders, the writings of Hippocrates, Galen, and the best Greek physicians, which had almost been lost sight of, came back to Europe with practical additions and modifications of great interest. Venesection was employed with greater moderation, and milder purgatives were substituted for hellebore and the like.

Rhazes, 852 to 932 A.D., besides reproducing the most important works of Hippocrates and Galen, gave the first account of small pox, which, like the plague and cholera, came to us from the East, where he had seen it before the Saracens brought it into Europe in the course of their invasion. His description of this disease served for 500 years, and it is perhaps worthy of remark that he compares it to a ferment in the blood, like must. He is said to have been the first to employ chemical as distinguished from Galenical remedies.

Avenzoar speaks of adherent pericardium and mediastinal abscess, and employed nutrient enemata. Albucasis appears to have been very enterprising as a surgeon. It was only at the end of the fifteenth century that, in the general revival of learning, Greek medical literature displaced the Arabian writers, and again resumed its authority.

The Renascence.

Already in the fourteenth century post-mortem examinations and dissections of the human body were made. The imagination was stimulated and a material impulse was given to the energies and ambitions by the discovery of America in the fifteenth century, and the invention of printing in 1462 made general intellectual culture possible. An evidence of the revival of interest in medicine was that the practice of medicine, which had drifted into the hands of monks and priests, was reclaimed. Linacre in this country took the licensing to practise out of the hands of the bishops, and founded the Royal College of Physicians in 1518.

The prodigious mental activity of the sixteenth century took in medical matters the form of eager and close study of human anatomy. Vesalius challenged the accuracy of Galen, and was haled before the Inquisition for his pains. Other names which mark this epoch and which have been left imprinted on some part of the human frame are Fabricius, Eustachius, Fallopius, Ingrassins, Colombus, Arantius, Varolius, while Servetus, Colombus, and Cæsalpinus almost penetrated the secret of the circulation. This great discovery, however, was reserved for our own Harvey, and the publication of the *De Motu Cordis* in 1628 constituted the most important epoch in the history of medical, and indeed of biological science. But while vindicating his undoubted claims we must not forget that he owed his early knowledge of the anatomy of the heart and vessels to Fabricius, and drew his inspiration from the teaching he found at Padua. There is no need for me to dwell on the importance of the discovery of the circulation. When completed by the demonstration of the capillaries by Malphighi and by the discovery of the lacteals already made by Asselli in 1622, and of the receptaculum chyli and thoracic duct by Pecquet in 1647, and of the lymphatics by Steno somewhat later, the foundation was laid for physiology and the first step taken towards a real comprehension of disease.

Sydenham.

Sydenham may be called the English Hippocrates. He was the last and best of the pure Hippocratic school, unless, indeed, we include Trousseau. He was above all a careful clinical observer. If time had permitted it would have been interesting to compare his knowledge of disease, the remedies he employed, and the theories he entertained as to the causation, nature, and treatment of disease with those of Hippocrates and Galen, on the one hand, and with those of the present day on the other. With regard to remedies the great acquisition of Sydenham's time was bark, which had been brought over from America by Jesuit missionaries about the middle of the seventeenth century. After accepting it cautiously, he employed it freely but judiciously, laying down rules which have been found useful ever since. Mercury was of course in common use, and antimony was an acquisition of which he thought highly. Epidemics he attributed to influences emanating from the earth, and he considered that different years and the various seasons impressed different characters upon the prevalent diseases, in which, in fact, he followed Hippocrates. Other diseases were due to vitiation of the blood; Nature was engaged in the expulsion of the peccant substances. It was the business of the physician to co-operate with nature, and his art consisted in recognising the indications presented by the symptoms and the direction in which he must act in order to aid in restoring the normal equilibrium. "As for the physician," he says, "all his philosophy consists in following the history of diseases and in knowing how to employ the remedies which experience has shown to be the most efficacious for their cure, and at the same time he ought to follow a method which is founded, not on chimerical speculations, but on a common and natural way of reasoning."

The Growth of a Science of Physiology.

Later still the physiological discoveries of Haller, the establishment of the principle of irritability as a property of living tissues, and the employment of the term "stimulus" led to another general theory of disease—the doctrine that fever and inflammation were the result of over-stimulation, which was attended by a return to extravagant and indiscriminate bleeding. From this there was the Brownonian reaction to the contra-stimulant doctrine, with equally indiscriminate, if not equally mischievous, administration of stimulants. Even the revelations of morbid anatomy and pathology were at first made the basis of a general doctrine relating to disease—the organicism of Broussais; everything was referred to gastro-intestinal inflammation, and again venesection was the universal remedy.

From this time the character of the work which I have set before myself changes. Up to the present we have only been able to register accretions of knowledge and follow interpretations more or less close to the truth which were advanced in the absence of science. We have now reached a point at which we are entitled to say that

ultimately science is to be our guide. Therapeutics will be scientific in proportion as the operation of remedies is referred to physiological laws. Physiology, in turn, is scientific in proportion as vital actions and processes are referred to physical and chemical laws. What remains for us to do is to follow the rapidly converging lines by which this consummation is being approached.

Taking up our parable again at Harvey's great discovery, we find that it remained comparatively barren until it was supplemented by Lavoisier's explanation of the process of respiration, and indeed almost until a further impulse was given to thought and experiment by a diagnosis of diseases of the heart by means of physical signs.

Then an important step was made in the elucidation of the mechanism of the circulation by the discovery of the vasomotor nerves, and the demonstration of the contraction and dilatation of the arterioles in obedience to stimulation of these nerves, by Claude Bernard.

Almost concurrently the regulatory apparatus of the heart's action through the vagus and sympathetic was identified by the Brothers Weber. These discoveries were followed out in detail by a multitude of experimenters and the adjustment of the supply of blood to local demands for the purposes of nutrition, secretion, muscular action, and the response of the heart to the general requirements of the system, to excitement, emotion, exercise, are now thoroughly understood.

It is only comparatively recently that the blood pressure in the arteries and veins, and in different parts of the arterial and venous system, first measured tentatively by Stephen Hales, has been experimentally investigated by the graphic method by Ludwig and his school and made available for clinical work through the sphymograph by Marey and his followers.

The relative share of the heart and vessels in the production of variations in the blood pressure was thus made clear, and then for the first time the complex and multitudinous indications afforded by the pulse could be understood.

As the microscope has revealed the intimate structure of the tissues and the mode in which they are first developed and then maintained, so chemistry has followed step by step, interpreting the connection between structure and function. The molecular changes which constitute the science of chemistry, indeed, underlie and determine the structural changes revealed by the microscope. Chemistry it is which brings us closest to the ultimate facts of life, and gives us the deepest insight into vital operations. Every vital action is a chemical action, whether the as yet to us mysterious process by which are built up the complex chemical molecules out of which the tissues are constructed, or the partially understood catabolic operations by which energy is liberated.

Profound importance attaches, therefore, to the progress of organic chemistry, and those who have prosecuted its study, from Berzelius and Liebig, who led the way by analysing the excretions and secretions and by separating and classifying the organic constituents of the various structures, down to the workers of the present day, who by processes of inconceivable delicacy and refinement isolate the toxins and antitoxins which play so important a part in disease, have ministered to the progress of medicine. Chemistry must ultimately form the link between physiology, pathology, and therapeutics.

The Beginnings of a Science of Pathology.

So far we have been chiefly concerned in following the growth of knowledge relating to healthy structures and normal functions. Facts relating to the effects produced by disease on the different organs could be collected, and the symptoms attending the progress of disease and revealing its nature could be recorded, independently of any comprehension of the processes by which morbid changes were effected. Such accumulation of facts and such observation of symptoms were indeed necessary before study and experimental investigation of morbid processes could be undertaken.

Morgagni (1682-1771) may be called the founder of pathological anatomy. He was the first to describe on a large scale minutely and systematically the appearances found in *post mortem* examinations and to connect them with the symptoms observed during life.

John Hunter, who had perhaps a deeper insight into pathological processes, may be placed side by side with him; Andral and Cruveilhier later produced magnificent treatises and atlases, and since their time an enormous accumulation of facts by pathological societies has taken place, and innumerable works on pathology have systematised the results and marked the progress made. The intent study of the changes produced by disease could not but imply a desire to understand the processes by which they were brought about. Chief among the men who have thrown new light on morbid changes and given an impulse to the study of the science of pathology must be placed the names of Virchow and Paget. With Virchow's *Cellular Pathology* published in 1856 a new conception of pathological changes was introduced. They were seen to be perversions of cell nutrition and cell activities, and diseases of the various organs were studied not as such, but as due to morbid changes in the cell elements of the different structures entering into their composition.

Inflammation, the most common and important of these processes, has naturally been the battle ground of rival theories. For a long time it was regarded as a purely vascular phenomenon, and all the changes in and around an inflamed area were studied from the point of view of contraction and dilatation of the capillaries and of acceleration or retardation of the current of blood through them. Then exudation of liquor sanguinis into the interstices of the tissues and proliferation of the tissue elements were looked upon as the essential feature of the inflammatory process, and later still came Cohnheim's discovery of the migration of leucocytes. It would almost seem that every detail of the changes which take place in the course of a local inflammation is now known. With the progress of this knowledge ideas as to the nature and character of the process have completely changed. Formerly it was looked upon as destructive only; now it is recognised as primarily, at any rate, defensive—a mustering of leucocytes to oppose the invading bacillus, or a preliminary to repair of damage by the removal of structures too deeply injured to be fit for further service.

While so much is definitely known of the behaviour of vessels, and blood corpuscles, and leucocytes, and tissue elements during inflammation, chemistry has not yet said the last word on the changes in the blood and structures. It is in virtue of some antecedent chemical and consequent physical change in the capillaries and tissues that the leucocytes are arrested and made to traverse the capillary wall, and it is not as an act of volition, but in virtue of some chemical affinity that the phagocyte englobes and disintegrates the bacillus.

The microscope has played the same important part in pathology as in physiology. The structure of all the forms of tumour has been minutely studied, and their relations with normal tissue and with each other ascertained. Degenerations of all kinds in glands, muscles, and nerve centres have been followed from the initial departure from normal conditions to complete disintegration, and the influences under which they have taken place have been investigated.

At all periods clinical observation has been in advance

of physiology and pathology, presenting problems for solution, suggesting and stimulating inquiry, and waiting to turn to therapeutic uses every addition to knowledge.

Perhaps the first clinical discovery which brought physiology to bear directly on practical medicine was the introduction of physical diagnosis by means of percussion and auscultation, the former by Avenbrugger (1761) and Corvisart (1818), the latter by Lænnec (1819). This not only brought the diseases of the chest within the ken of the physician, but opened out a new and wide field for observation. The effects of interference with the circulation by the various forms of valvular and structural disease of the heart could now be followed; the operation of back pressure through the lungs and systemic veins was traced, and the dependence of such symptoms as dropsy upon heart disease became manifest. A most powerful impetus was thus given to experimental research. Both physiological and pathological affections of the different valves were indeed natural experiments on the hydraulics of the circulation.

Jenner's great discovery of vaccination, unparalleled as to the direct benefit conferred by it upon the human race, was essentially a fact of clinical observation. When however, its significance was grasped by the genius of Pasteur it became the starting point of bacteriological pathology, which gives the most far-reaching insight into the causation of disease, and constitutes the most important of all the links yet made out between science and therapeutics.

The employment of the thermometer in clinical work constituted another important epoch. We should now think clinical work impossible without it, but there must be many here who, like myself, completed their studies without ever using it, and who remember its introduction by Wunderlich.

It is not too much to say that the clinical thermometer has revolutionised clinical observation and practical therapeutics. Before its introduction and systematised employment there could be no adequate study of pyrexia, its significance, its causation, or its effects, whether as an incident of inflammation or as the essential feature of fever, or as the fatal factor in hyperpyrexia.

Another physiological discovery of far-reaching importance to which clinical observation has led up has been the definite determination of the fact that the ductless glands and probably other glands supply to the blood some material which plays an important part in the nutrition of the tissues, stimulating or modifying the cell activities.

Few histories are more interesting than that of the successive steps by which extract of the thyroid gland was ascertained to cure myxœdema, beginning with the observation that cretinism was associated with goitre, and that the essential feature of this affection, myxœdema, could be induced by extirpation of the thyroid. Upon this, experiment showed that the cause was not the accumulation in the blood of some substance which ought to have been withdrawn from it by the gland, but the absence of some material which the gland supplied.

Older than this, and even more important was the discovery of the part played by micro-organisms in certain diseases. Here again clinical observation and reasoning had anticipated Pasteur. The communication of disease from person to person, the incubation period which intervened between the exposure to contagion and the development of symptoms, the successive stages which these symptoms followed and the reproduction in the individual of the poison, had given rise to the zymotic theory, according to which the history and course of these diseases were comparable to fermentation following the addition of yeast to a saccharine solution.

Experimental demonstration, however, is now demanded, and the place of theory in medicine is only to suggest and to guide investigation. It was not, therefore, until Pasteur—by the successive steps of his work on the various fermentations on pèbrine—the silk-worm disease—on malignant pustule and splenic fever—had demonstrated the powers of micro-organisms, and Lister, by that infinite capacity for taking pains, which, when combined with true insight, constitutes genius, had made the totally unexpected and unforseen extension of the germ theory to surgical affections; until Koch again, in 1882, had identified and made visible the *corpus delicti* of phthisis in the tubercle bacillus—that the microbic origin of these diseases was fully admitted and the sweeping character of this new department of knowledge was recognised.

Modern Therapeutics.

We have still to ask, What is the bearing of all these advances of knowledge on therapeutics, which, after all, is the object of our lives?

As regards the remedies at our command, they are only too numerous. Recourse to a great variety of drugs is fatal to exact knowledge of their effects and to precision in their use, but new ones are added every day for the benefit chiefly of those who do no know how to employ the old ones. There have, however, been recent acquisitions of extreme value, heavily discounted, unfortunately, in the case of some by the mischief done through their indiscriminate use; the antiseptic group, the chloral sulphonal group, the salicylates and salicine, the phenacetins and antipyrin class, coca and cocaine. What makes some of these, moreover, far more important and interesting is the fact that their physiological action has been inferred from their chemical constitution.

A fact which brings practical therapeutics into near relation with physiology and pathology is that the active principles of all drugs are isolated, their chemical composition is ascertained, and their physiological action investigated. Pharmacology, in effect, has become a branch of experimental physiology, and the immediate effect of remedies is known with a completeness and accuracy heretofore undreamt of. All this is working towards a more intelligent employment of drugs, and leads towards the goal of all the efforts to bring therapeutics within the circle of the sciences. This goal is that we should know not only the effects of remedies, but how these effects are produced. This is in the last resort a question of chemistry. As I have said before, all vital actions are attended with molecular or chemical changes, are, from one point of view, chemical actions, and come under the laws of the correlation of force and conservation of energy; so, therefore, are the physiological and therapeutical action of drugs, and obviously the key to the latter is to be found in the chemistry of vital processes. Therapeutics, to become scientific, is only waiting for answers to the questions which she puts to chemistry. Why are sodium salts so much more abundant than potassium salts in the blood, and why are the former almost confined to the liquor sanguinis, and the latter to the corpuscles? We must assume that albuminoid proteids have an affinity for sodium, and the globulins for potassium. With the answer to this is bound up the secret of the necessity of sodium, potassium, and calcium salts to anabolic and catabolic operations, in which they take no traceable part, and of the presence of iron in the blood corpuscles.

Why, again, in the case of substances apparently so similar as potassium and sodium salts will the former, if injected into a vein, even in small quantity, paralyse the heart and destroy life, while we see pints of normal saline solution thrown into the circulation with none but good results? How does prussic acid—the simplest in composition and constitution of all organic substances—prove fatal with such fearful promptitude by its presence

in infinitesimal proportion in the blood? How again does morphine suspend the activity of the nerve centres? Chemists must admit that the poisonous effects of prussic acid and morphine can only be due to some molecular change in these substances; they know that if the deadly cyanogen is so tied up that its component atoms cannot fly apart it is innocuous, and that a very slight change in the chemical constitution of the morphine molecule entirely alters its effect; it is an almost irresistible inference from the doctrine of conservation of energy that the change in the molecule, say of the morphine, must be equal and opposite to the molecular change in the nerve cells which it arrests. It seems to me, therefore, that we have in the chemical constitution of the morphine molecule a clue to the character of the chemical change by which nerve action takes place and to the quantivalence of nerve energy.

The basis of therapeutics is diagnosis, the grasp of the actual condition underlying the symptoms or phenomena, and the greater our command of powerful remedies and the more precise our knowledge of their effects and of the mode in which these effects are produced, the more important does accuracy in diagnosis become.

There are, no doubt, still new fields to conquer, but in the recognition of diseases, local and general, there is not much which seriously concerns the human race which remains to be done. The same degree of knowledge, however, does not extend to morbid processes. Our comprehension of the significance and essential character of inflammation is by no means complete and satisfactory. The part which fever plays and the place which it holds among the phenomena of disease is far from being fully understood. It cannot have been intended by nature for the destruction of the subject, and we can see distinctly that in some cases it forms part of the defensive operations; possibly, indeed, its general tendency is defensive, by promoting the production of phagocytes, or possibly a certain elevation of the temperature may be fatal to maleficent organisms which have taken possession of the blood or tissues. We are not certain, indeed, whether in pyrexia the heat-producing oxidation in the structures receives its stimulus from, or takes place at the bidding of, the nervous centres, or, on the other hand, is due to enfeeblement of the restraint which they normally exercise over it, or whether it defies control by the thermotaxic nervous centres.

Choice of Remedies.

Of course our individual guide is mainly personal experience and observation of their effects. But the human mind is so constituted that it demands reasons, and even our experience finds expression in theory. There is, however, no theory which is supposed to apply to pathological processes and therapeutics in general, like the humoral doctrine of Hippocrates and Galen, the various iatro-chemical and mechanical theories, the animism of Stahl; the stimulant, contra-stimulant, or organicist ways of accounting for everything—no theory of universal application. Yes! Homœopathy still, like a belated ghost, haunts the dawn of scientific medicine, and men are still found who wear its doctrines as a cloak for ignorance, or flaunt them as an attraction for the more foolish and credulous of the old ladies of both sexes.

But while our minds are not dominated by any *a priori* conception of a vital principle governing all vital operations, we must not flatter ourselves that we cannot be carried by fashions in treatment.

Names have still a great influence, and the lesson which Galen constantly enforced, that we must treat not the disease but the patient, is as necessary in our day as in his. It does not follow that because we call a pain rheumatic, the remedy is salicylate of soda.

It is inevitable that our imagination should be impressed by the revelation of the wonderful part which micro-organisms have been found to play in the genesis of disease, and that our thoughts should turn towards antisepsis in our treatment. So far the greatest success has been in dealing with microbes outside the system, as in antiseptic surgery and preventive medicine, and further triumphs are to be hoped for in this direction, as, for example, in the prevention of tuberculosis. We have as yet little evidence of the power of antiseptics to follow and destroy the microbes when they have once got possession of the system. Quinine, however, kills the malarial plasmodium, and we have now the antitoxic serum. Apparently, too, one virus may be antagonistic to another, and an attack of small-pox has often seemed to cure phthisis. We must continue our efforts to apply antiseptic principles, but it is most important that we should not allow ourselves either to imagine that we have obtained effects which have not been realised, or to attribute results to anti-sepsis which may have come from other causes.

It was inevitable, again, that we should be greatly struck by the remarkable power of lowering the temperature possessed by the antipyretic class of drugs. We seem to have within our reach the means of dealing with our most formidable enemy, and it is a great triumph to be able to point out to friends the effect of our remedy on the temperature chart, especially when it has been accompanied by relief of headache and other symptoms. Here it is very important that we should maintain an attitude of cool observation, and not conclude that in bringing down the temperature we have necessarily exerted a favourable influence on the course of the disease. We may have been bringing down also the patient, and it is not so certain that Nature does not know her business when she sets up febrile reaction.

I congratulate you and myself that we live at a time when the art of medicine has made such progress, when science in its application to medicine has brought such marvelous and beneficent aid to therapeutics, and when our beloved profession stands so high in the estimation of the world.

PROSECUTION UNDER THE V.S. ACT.

In the North Riding Police Court on Thursday, August 8th, before Mr. C. W. Woodall (in the chair), Sir Frank Lockwood, Q.C., M.P., Mr. J. E. Ellis, M.P., Captain Johnstone, Colonel Kendall, Mr. John Dale, Mr. G. E. A. Cayley, and Mr. Leasowe Walker, Thos. Danby Belt, farrier, Hunmanby, was summoned for illegally practising as a veterinary surgeon without having a certificate, at Gristhorpe, on the 9th May.

In reply to the charge the defendant pleaded guilty.

Mr. G. E. Royle said he appeared to prosecute in the case. The proceedings were taken against the defendant by the Royal College of Veterinary Surgeons, for whom he appeared. The facts of the case were very simple. On the 9th May Mr. Belt, through the agency of his son, who lived with him, sold a bottle of horse medicine to a person in the employ of Mr. Sawdon, of Scarborough. Mr. Sawdon subsequently sold the medicine to another person. On the bottle of medicine was a label, on which the medicine was highly recommended, and it further stated that it was prepared by T. B. Belt, veterinary surgeon, Hunmanby, which was in direct contravention to section 17 of the Veterinary Surgeons' Act of 1881. Mr. Belt had committed an offence under that section of the Act (quoted), and had pursued a wise policy in pleading guilty. It was determined that a stop should be put to the appropriation of the title of veterinary surgeon, and this was not done from any selfish motive. It was perfectly clear that the Legislature in passing the Act had

not the interests of the College and practitioners alone at heart, but the interests of the public, and that was why offenders became liable to such a heavy penalty as £20. It was particularly hoped that the Press would take notice of the matter.

The Chairman stated that the Bench had decided that a fine of £1, including costs, should be imposed.

CRUEL TREATMENT OF A HORSE.

Charge against a Veterinary Surgeon.

In Aberdeen Police Court, Tuesday, August 13th—before Baillie Edwards—William Marshall, veterinary surgeon, George Street, was charged with having on 17th July, in premises in Jopp's Lane, cruelly ill-treated a horse belonging to the Northern Preserving Company, by beating it with a stick and a hammer, and lacerating its mouth by attaching a twitch to it. He pleaded not guilty, and was defended by Mr. J. Y. Collie, advocate.

Henry Ross said he took the horse to Marshall's place to be shod. He left the animal for some time, and when he returned he saw Marshall striking it on the side with a stick. After that accused attached a twitch to the animal's mouth, and twisted it tightly. Witness said the horse was not needing that, and Marshall replied that it deserved all it got. Witness denied having said that he saw accused striking the horse with a hammer. On the following morning the animal was swollen about the ribs owing to the blows it had received, and its mouth was marked by the twitch. Its mouth was so much hurt that it could not eat very well for several days. In reply to Mr. Collie, witness said the horse was somewhat difficult to shoe. By the Fiscal—The horse was pricked in the shoeing and that might have made it fractious. Re cross examined.—He knew that the horse kicked off one of its shoes. By the Fiscal.—He had never seen any difficulty in shoeing the horse before. A van boy corroborated some of the evidence given by Ross. A horse shoer who was in the forge at the time libelled, gave evidence very reluctantly, but admitted that if the animal bore the marks described, it might not have been fairly treated. In reply to Mr. Collie, witness said he did not think the twitch was unduly used. He could not say if the use of the "side lining" would have accounted for the swelling on the ribs. The manager of the Northern Preserving Co., spoke as to the condition of the horse on the morning after it had been shod. When his company purchased the horse they were told it was difficult to shoe. A horse shoer, employed at another forge in town, gave evidence to the effect that he had shod the horse for three years and had had very little difficulty with it. He never had to use the twitch. A horse shoer in the employment of Mr. Marshall said the horse had been retractory ever since he knew it, and it was refractory on the occasion in question. Henry Ross told witness to put on the twitch but he did not do it. The horse might have been marked by the twitch without the latter having been unduly used. The use of the "side lining" might have accounted for the marks on the ribs. The horse kicked off a shoe twice after it had been nailed on. Another employee of the accused said he put on the twitch. Neither of these witnesses saw Marshall striking the horse with a stick. After further evidence had been led the Fiscal and Mr. Collie addressed the bench.

The Baillie said that, going chiefly on the marks on the horse which showed that it had been ill used, he must convict the accused, who would have to pay a fine of 30s, with 29s. 6d. of expenses, the alternative being ten days' imprisonment.

TUMORS OF THE BRAIN.

By H. D. Gill, V.S.

"Lydtin," quoted by "Dieckerhoff," has given the history of a twenty-year-old horse which for ten years had shown complete atrophy of the masseter and temporal muscles on the right side. No other symptoms presented themselves till, without warning, a "comatose condition" developed; the patient took no food or drink, and could not swallow. After a few days he was killed, and at the autopsy a tough nodular tumor half the size of the cerebellum was found over the petrous bone. The tumor enveloped the trigeminal nerve and extended forward to the right hemisphere, and behind to the medulla. It was found to be a fibro-sarcoma which had risen in the dura.

Dr. Samuel Atchison, of Brooklyn, recently sent to the laboratory a brain of a horse with the following history: The horse, which was not young, had had no symptoms of illness of any sort till one evening a frenzy apparently seized him; there were several almost convulsive attacks, and about the middle of the night the animal died. Examination of the brain showed two tumors, each slightly less in size than a hen's egg, springing respectively from the posterior portions of the right and left choroid plexuses, within the ventricles; each was attached by a narrow pedicle; the surface was tough and fairly dense; within the tissue was spongy and contained considerable clear fluid. Microscopic examination showed the tumour to be a fibro-sarcoma.—*Journal of Comparative Medicine*

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

By the time our next issue, says the *American Veterinary Review*, shall have reached its readers, veterinarians from almost every state in the Union will be upon their pilgrimage to the great Northwest, whither they will be journeying to attend the thirty-second annual meeting of the United States Veterinary Medical Association, which meets at Des Moines, Iowa, in September.

From all indications the approaching meeting will be the largest numerically, most national in character, and most important from an educational standpoint that has occurred since the organization of the association in 1863. The centrality of the place of assemblage will insure the attendance of a very large number of members who otherwise could not or would not visit the annual conclave.

From the imperfect programme now at our command, there appears to be no lack of material for the intellectual delectation of those who are so fortunate to be able to be present; and it is to be furnished by some of the brightest minds in the association. Papers are promised by such men as Schwarzkopf, Williams, McLean, Butler, Trumbower, Harger, Huidekoper, Reynolds and Niles, and as the list always increases as the time for the meeting approaches, we may be sure of even a more extended programme.

To this array of names may be added important discussion, as many of the subjects will embrace questions of sanitary economy, which are of the greatest moment to the profession in America of to-day. Educational problems will undoubtedly engage their deliberate consideration; and as so much good is flowing from their agitation of this question for the past few years, every member is alive to its necessity and exhilarating influences.

CORRESPONDENCE.

ANÆSTHETICS AND THE STANDING OPERATION.

SIR,

As my name has been so freely mentioned in the correspondence on the above subject, may I again beg the indulgence of a small space in your journal. Let me at once say that in starting this correspondence I have tried to avoid all personalities. I consider them quite unnecessary in any professional correspondence. Practitioners whom I know and respect hold different opinions to myself on this subject, and for my part I do not wish to write a single word that could give any offence to them. Their skill and experience I do not doubt, and whilst thinking them wrong, I respect their opinions.

Will "An Operator" say in what way the statements I have made can do harm? I think they ought to have quite the contrary effect. Certainly, I fail to see where any harm can be done. In reference to "An Operator's" paragraph as to the "advantages of the erect position." I must beg to differ from him. Will he read the paper by A. C. Stewart appearing in last issue. The case for and against is well stated therein, and requires no comment.

Mr. Davidson makes one statement that I must beg to correct. I certainly never intended to pit the experience of Mr. Barrett against that of Mr. Freer. It would be an impertinence on my part to do so. Perhaps if I could get such results as Mr. Barrett has done I should favour his way of operating. For I notice that castrating "250 horses a year" Mr. Barrett says (1) the operation is so quickly over, (2) the patients show no pain or excitement, (3) there is neither swelling or stiffness at any time afterwards, (4) they never require any further attention. These points seemed to me almost more than one could expect, and if my small experience of the operation had borne out these results I should never have started the correspondence.

Then Mr. Davidson asks me how I guage pain? A most difficult question to answer. All I can say is if we take our own feelings as a standard, if we err at all it will be on the right side. W. H. D. also says the operation on a colt (or horse, I presume) cannot be compared to ourselves.—Why? I may be very dense, but I fail to see where the rules of logic are broken.

As I have said before, my only idea in starting this correspondence was to try and get the veterinary profession to use anæsthetics more frequently, especially in operations such as castration. If the profession think it more humane to work without them, they must do so. Old customs die hard, but I trust that we may progress with the times. The tendency among our clients is certainly to save unnecessary pain being inflicted on their animals, and as a profession we ought to take every opportunity of enabling them to do so. In my opinion those who favour the standing operation fail in doing so.

I must thank you for the space you have placed at my disposal during this correspondence, which, as far as I am concerned, must now cease. I trust it has done good, certainly it cannot have done any harm. Both sides have been presented to your traders. They must now judge for themselves.—Yours very truly,

Leicester. J. G. PARR.

SIR,

There is an old adage which says "if you have a bad case abuse the opposite side." Judging from the tone of some of your correspondents in this week's issue, I fear that the above adage in being put to practical use in the discussion of that very hackneyed subject, viz., "castration standing." But as abuse and sarcasm do not constitute argument, I hope our opponents will avoid this style and discuss the matter in an amicable manner.

We are accused of making statements "which if uncontested are calculated to do much harm" by a correspondondent signing himself "An Operator." But strange to say this correspondent does not advance a single tangible argument to prove the erroneous nature of these statements. There is one point, however, which cannot be passed over lightly as it is plainly founded on a fanciful hypothesis.

We are calmly told that "the casting is quite as dangerous, and the feeling of restraint is more painful to a colt than the operation itself." What is the proportion of accidents due to casting colts? I have never yet seen an accident from this cause, and if ordinary care be exercised, the statistics would demonstrate that the risk is a very trivial one.

As regards the painful feeling of restraint this depends on how the animal is secured, and no man of ordinary common sense would so bind down an animal as to cause pain by the process. To compare the fear and so-called mental agony in the colt due to restraint with the pain of operation is simply absurd.

"An Operator" next states that the standing operation is more humane because if properly done it is momentary, while the other method is of necessity prolonged and consequently painful. Even admitting that if colt stands the operation without casting the time of the latter procedure is saved, I still deny that the operation itself can be more quickly or less painfully performed. Surely the same structures are divided in each instance, and if the animal be cast, it is clear that a more rapid operation can be performed. The argument of time, however, would be considered rather a far-fetched and peculiar one in human surgery.

We next read that the standing operator has neither "broken back," "broken thigh," etc. Probably not, but he runs a serious risk of receiving these injuries himself during the struggles of the colt. I fail to observe the advantages of the "caustic clam" over the operation by torsion, either from a surgical or humane point of view. If we are to have "specialists" in castration let us at least expect that they will discover some method of operation more in accordance with modern views on surgery, than that of applying irritants to the end of the spermatic cord, in the shape of caustic clam, etc.

"An Operator" is indeed to be congratulated on the handsome fee he receives; in his case at any rate the question of time cannot be of importance, an argument advanced by others, who grumble at the low rate of remuneration, making it a matter of importance to castrate so many colts per hour. Probably if he cast the colts for the operation the owners might grumble at the £2 2s., after observing how simple a matter castration is when performed in the ordinary way.

Your correspondent "C. P." writes a very candid practical letter, which clearly proves that the standing operation is adopted chiefly because others in a neighbourhood adopt this method. His graphic description shows that under these circumstance, the operation may occasionally be one "dreadful in the doing and melancholy in the event."

With reference to Mr. Davidson's letter I shall not encroach upon your valuable space more than necessary. He styles me a "prolific contributor," at any rate this is a preferable term to a barren one. I have never attempted the standing operation, simply because I have derived sufficient evidence from those who *have* practised this method that it is not likely to be either safe or successful. Indeed, after perusing a paper on the subject in the current number of *The Veterinary Record*, written by an experienced practitioner, I shall hardly be converted to this method. The case of the aged stallion quoted by Mr. Davidson, does not support his case to any extent.

If the animal happened to be a well-bred two year old not handled, and active with fore and hind legs, the Scotch saying which Mr. Davidson quotes might apply with equal force, when after a prolonged struggle the services of the hobbles had to be requisitioned. Then I would quote another saying, viz, "The longest way round is often the shortest way home.—Yours etc.,

Aug. 12th. E. Wallis Hoare.

Sir,

Please allow me a few more words in this discussion. I mentioned three cases of schirrous cord; one, I knew, followed castration standing, the other two were strangers, but had undoubtedly been operated on by clam, standing or lying. I repeat that cases of schirrous cord are on the increase not only judging from my own observation but from facts gleaned in conversation with many friends in this and other districts. In the standing operation the clam is mostly used, and the tumour is due to the fact that the castrator unlike "an operator" is not sufficiently careful to return the cord. "An operator" says: "The standing operator has neither broken back, broken thigh, nor shiverers to look forward to," neither has the man who casts his colts and operates under chloroform. Without the aid of this drug I have castrated since 1866 certainly over 1000 colts, but to avoid being associated with a gentlemen mentioned in the Scriptures, we will put it at 500. In the whole of that time I have had two broken backs; the first was in June 1876, a badly bred brute that would have settled the hash of a standing operator, instead of hurting himself; the second was in 1885 a 3 year old thoroughbred colt the property of the Countess of Cardigan. A day was fixed and I arrived to find the whole lot preparing to leave for Newmarket. The understanding was that I should give chloroform, the colt should be properly prepared, and plenty of assistance at hand; their contract failed and so did mine; I endeavoured to bring off the operation with too little assistance, and no chloroform, and the colt broke his back.

Colts are not made shiverers by casting, there are as many shivering fillies as colts, and I have detected plenty of the latter shivering long before castration. There is no petty jealousy on my part, anyone can castrate for me. I am so fond of it that I would not rob any man of a day's castrating. It is kind of "An operator" to divulge his clam dressing, the same was used by gelders of bulls and rams long before we were born.

Mr. W. H. Davidson twits me with a want of practical knowledge, I presume he refers only to castration in the standing position. It is quite true that I have only seen 3 colts operated upon in this manner. The first two cases did not impress me at all favourably, but the third quite settled any leaning that I might have had in that direction. The subject was a thoroughbred yearling of a tractable disposition, the usual preliminaries having been completed the operator commenced business. At the first stroke of the knife the poor brute threw himself down and the standing operation was completed on the floor. Half an hour after the departure of the operator one clam came off and the colt nearly bled to death, but ultimately made a fair recovery. He was then turned out with two 2 year old colts to roam at their own sweet will through several fields. From this time melancholy marked him for her own, he refused to participate in the frolics of his companions until one summer's evening he was induced to have a galop into the adjoining field passing through the open gateway he unfortunately, came in contact with the catch on the post, and so frightfully injured himself in the region of the abdomen and stifle joint that on my arrival a neighbouring gamekeeper was sent for, and a friendly bullet quickly dispatched him to regions where chloroform will cease from troubling, and standing operators may be at rest.

Messrs. Parr and Wallis Hoare who can well take care of themselves, will probably attend to the remainder of the letter.

The issue is simply between castration in the standing position and castration under chloroform. Let those castrate standing who like. I intend to advocate more than ever I have done "not only for this but all other painful operations" the administration of chloroform, its advantages to patient and operator, far outweigh all other considerations.—Yours faithfully,

Uppingham, Aug. 14, 1895. B. Freer

Dear Sir,

Seeing in *The Veterinary Record* for August 10th Mr. A. C. Stewart's remarks on Mr. Spooner-Hart's article on Castration, in *The Veterinarian*, I must ask you to insert the following explanation:—I had the honour to read a paper on Castration, especially referring to the operation standing, before a meeting of the Royal Veterinary College Medical Association, at which Mr. Spooner-Hart was present, I conclude therefore that he refers to myself in the said article. Now Sir I have castrated several colts standing, and assisted to operate on some hundreds more in the same position, and that I should make such a statement as "That in operating I stood behind the animal" is simply ridiculous. I quite believe Mr. Spooner-Hart thought it a "Fairy Tale" for in the face of my statement of having operated in the standing position together with the same assurance from several other gentlemen present, he told us point blank that he did not believe that the operation could be performed in that way. I may say that on seeing Mr. Spooner-Hart's article I at once wrote to *The Veterinarian* refuting the statement but beyond agreeing with me in a few words, they did not publish my refutation. There are several gentlemen who were present at the meeting that can answer for the truth of the above remarks. Of course Mr. Stewart's remarks refer to any man making such a statement about operating behind the subject, otherwise I should feel awfully trampled on. In future perhaps it would be as well if Mr. Stewart had better grounds on which to base his scathing remarks.

Yours, etc.

C. E. Parker,

Assistant to Mr. J. H. Parker, M.R.C.V.S.

Abingdon, Aug. 13th, 1895.

"STAR VETERINARY COMPANY SWINDLE."

Sir,

Apropos of those remarks from *Truth* about the so-called "Star Veterinary Company Swindle" may I be allowed to state that some few weeks ago, they started a shop in Brighton. Two men were employed, but *in a few days after the announcement of the opening* the shop was closed and a sale was declared. What was the meaning of this? Was it a dodge to sell their nostrums?

One dodge of these veterinary medicine companies, is to go into a town and say to a large horse-keeper "Mr. B. has ordered a large quantity of medicines of my firm here they are, I will let you have them at a much reduced rate, etc., et.,

These veterinary medicine firms are one of the great causes of the reduced amounts in the ledger of veterinary surgeons.—Yours faithfully.

Jews.

Communications, Books and Papers received—Miss E. A. Ormerod, Messrs. G. Thatcher, O. T. Williams, B. Freer, J. G. Parr, W. Jackson, T. Fletcher, C. E. Parker, W. M. Scott, H. M. S. Chicago V. Coll. Prospectus, *American Vety. Record*, *Jrnl. Com. Med. and Vety. Arch.* (Philadelphia) Aug. *Aberdeen Evening Express*, *The Evening Gazette* (Aberdeen). "Russell on Horse-shoeing."